

IN THE CLAIMS:

1. (Currently Amended) A method for generating a genetically modified yeast organism for drug screening, which comprises the steps of:
 - a) causing heterologous expression of at least one protein or protein fragment by genetic modification by introducing a foreign gene into said yeast wherein the expression does not produce a detectable change of the phenotype which is perceptible from the outside of said yeast organism, wherein the detectable change of the phenotype which is perceptible from the outside of the yeast organism comprises the behavior of the yeast organism, the morphology of the yeast organism, or a combination thereof.
 - b) analyzing the modified gene expression pattern and identifying compensating differentially regulated genes; and
 - c) phenotyping said yeast wherein phenotyping is carried out following the reduction or elimination of compensating differential expression which is perceptible from the outside of said yeast.

2-4. (Canceled)

5. (Previously Presented) The method of claim 1, wherein the modified

expression in step a) is inducible.

6. (Previously presented) The method of claim 5, wherein the genetic modification comprises introducing a vector which enables the protein or protein fragment to be inducibly expressed, preferably a vector inducible with galactose, copper tetracycline or other comparably inducible vectors.

7. (Previously presented) The method of claim 6, wherein the genetic modification comprises a knock out, preferably an inducible knock out.

8. (Canceled)

9. (Previously Presented) The method of claim 1 wherein the yeast cell is of the strain *S. cerevisiae*.

10. (Previously presented) The method of claim 9, wherein the modified gene expression is analyzed with the aid of DNA or protein microarrays.

11-12. (Canceled)

13. (Previously presented) The method of claim 7, wherein the knock out of the

differentially expressed gene is carried out by replacing at least part of the coding sequence of the differentially regulated gene with the coding sequence of a reporter gene or parts of the reporter gene sequence which are sufficient to be detected.

14. (Previously Presented) The method of claim, 1 wherein the differentially expressed gene is less strongly expressed than in control organisms and the reduction or elimination of the differential expression is carried out by enhancing expression of the differentially expressed gene.

15. (Previously presented) The method of claim 14, wherein the reduction or elimination leads to growth inhibition of the organism.

16. (Canceled)

17. (Previously Presented) A genetically modified, phenotyped yeast, obtained by the method of claim 1.

18. (Currently Amended) A genetically modified yeast, having

a) genetically modified expression of at least one endogenous or foreign gene, which results in compensating differential expression of at least one other gene endogenous

to said yeast, and

b) a phenotype caused by the reduction or elimination of the compensating differential expression of the gene, wherein said phenotype which is perceptible from the outside of said yeast and comprises behavior of the yeast organism, the morphology of the yeast organism, or a combination thereof.

19. (Canceled)

20. (Previously Presented) A method for identifying a substance having an effect on the function of a heterologously expressed protein or protein fragment, which method comprises the steps of:

- a) contacting said substance with said genetically modified yeast of claim 17 or 18 and
- b) measuring the change in said modified yeast as compared to genetically unmodified yeast.

21. (Previously Presented) An assay for drug screening using at least one phenotyped yeast as claimed in claims 17 or 18, which comprises the steps of:

- a) determining the phenotype of said yeast
- b) contacting the substance to be tested with said yeast
- c) observing a possible modification of said phenotype.

22. (Canceled)

23. (Canceled).